

Amendments to the Drawings:

The attached sheet of drawings includes changes to Fig. 3. This sheet replaces the original sheet including Fig. 3. The change comprises changing "cash memory 1d" to --cache memory 1d-- and also changing "cash memory 2d" to --cache memory 2d--.

The attached sheet of drawings includes changes to Fig. 6. This sheet replaces the original sheet including Fig. 6. The change comprises changing "Port Management Table" to --Utilization State Management Table--.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes

REMARKS/ARGUMENTS

Claims 10-12 and 21-28 are pending. In the Office Action mailed October 18, 2007, claims 10-12 and 21-28 were rejected over the combination of Shoroff, Blumenau, and Igami (all of record). The independent claims (claims 10, 11, 12, 21, 22, and 28) are amended in this paper and are patentable over the references of record. The specification and Figure 3 and Figure 6 of the drawings are amended to correct various spelling errors noted below. Further examination and reconsideration of the application are requested.

The Claim Amendments

The independent claims are amended to make it clear that the storage system that is the subject of the claims includes a disk array accessed by one or more host computers. This is illustrated, for example, in Figure 1 and Figure 3 of the application. In addition, the independent claims now recite that when the storage system detects insufficient free space, a mount operation is performed from the storage system on one or more disk units at a remote storage system in communication with the storage system, so that the remote storage serves as storage area accessible by the host computers.

Thus, one or more host computers are connected to a storage system, and the storage system in turn communicates with a remote storage system, so that the host computers access the storage system, and the storage system mounts additional disk units at a remote storage system when it has insufficient free space so that the additional remote storage serves as storage area accessible by the host computers. These amendments are supported by the specification; no new matter has been added. See, for example, the specification at page 6, lines 6-23 and page 7, lines 11-17.

The Cited References

None of the cited references describe a structure such as that claimed. For example, Shoroff describes a processor 22 that directly accesses a disk drive 40 via a file system 28 and the host computer operating system 26 in memory 24 (see Fig. 1). Read/write operations are carried out through I/O 34. There is no teaching or suggestion of host computers that communicate with a storage system that in turn mounts disk units at a remote storage system to

serve as storage area accessible by the host computers. Igami describes an optical disk storage apparatus 100 that communicates directly with a data signal source 200 where data is temporarily stored in buffer memory 106 of the optical disk apparatus. Igami storage operations are managed in accordance with temperature variation of the apparatus (see col. 2, lines 17-36).

Blumenau describes host computers 150-152 connected to a data storage system 100, but does not describe the data storage system determining insufficient free space and performing a mounting operation from the data storage system on disk units at a remote storage system. Rather, Blumenau mentions mounting storage directly to the host computers via a host filesystem (see col. 2, lines 44-55). Blumenau describes a system in which data volumes mounted on a host computer can be dynamically reconfigured so the host computer recognizes the changed data capacity (see col. 7, lines 17-26). In contrast, the pending amended claims recite a storage system for host computers such that the storage system performs mount operations on remote storage disk units so the remote storage serves as storage area accessible to the host computers. Thus, Blumenau is involved with the host-data storage system interface, not a storage system-remote storage system interface as recited in the claims (see col. 6, lines 29-43).

Because of the configurations of the respective cited references, no combination of the references could provide the invention as recited in the amended claims. It is not possible for the cited references to be combined such that a storage system in communication with a host computer could detect insufficient free space and perform a mount operation on one or more disk units at a remote storage system so that the remote storage serves as storage area accessible by the host computers. Therefore, no combination of the cited references can provide all the limitations of the independent claims 10, 11, 12, 21, 22, and 28. These claims, as amended, are patentable over the cited references.

For at least the reasons cited above with respect to the independent claims, the claim dependent therefrom (i.e., claims 23-27) are also patentable over the references.

Specification and Drawing Changes

The specification as indicated and Figure 3 and Figure 6 of the drawings are changed to correct the spelling of "cash" to --cache--, the proper spelling in the context of this application.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6100.

Respectfully submitted,


David A. Hall
Reg. No. 32,233

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 858-350-6100
Fax: 415-576-0300
Attachments
DAH:dah
61216938 v1